

Revised DNIT for Furnishing of Auditorium at College of Dairy Science & Technology, GADVASU, LUDHIANA

S.No	Description of item	Qty	Unit	Rate	Premium	rate with premium	Amount
1/8.5 (b)	Dismantling brick work tile, masonry or tile lining						
		7.425	cum	682			5064.03
2/11.6	First class burnt brick work laid in cement sand mortar 1:5 in first storey upto 4 metres above plinth level.						
		54.86	cum	5,151			282609.23
3/15.9	12.5 mm thick cement plaster 1:4						
		426.612	sqm	189			80629.69
4/16.65	Preparation of plastered or concrete surface for painting (including sand papering the surface) using ready mixed cement based wall putty by applying two or more coats to get required finish						
		155.238	Sqm	80			12419.05
5/16.10	Distempering with Acrylic washable oil bound distemper (of approved manufacture) two or more coats over one priming coat to give an even shade						
		155.238	Sqm	75			11642.86
6/30.61c	Providing & Fixing in position 5mm thick bevelled edge mirror of superior glass (of approved make) complete with 4mm thick hard board backing fixed in with rawl plugs 50mm, C.P. brass screws and washers and S/S Studs on top complete in all respect (as required by the Engineer-in- Charge)						
	Size 1500mmx600mm or any other size	2	each	2,767			5534.00
	For Green room Toilets						
7/30.55b	Providing and fixing in position vitreous Chinaware white laboratory sinks of approved make (to the approval of Engineer-in-charge) consisting of a pair of brackets, C.P. brass waste 40mm complete in all respect.						
	Size 470mmx370mmx180mm						
	for green room	1	each	6,426			6426.00
8/30.3b	Providing and fixing in position Chinaware Floor Mounted One Piece EWC type with matching chinaware cistern 10 ltr. Capacity. (without cistern fitting) with P trap or S trap of approved make (to the approval of the Engineer-in-charge) and seat cover complete in all respect and to the entire satisfaction of Engineer-in-charge						
	Chinaware Floor Mounted One Piece EWC rim less type with matching chinaware cistern 10 ltr. Capacity. (without cistern fitting) size 69x36x74 cm with P trap or S trap and seat cover complete in all respect.	1	each	16,520			16520.00
9/30.31 iii	Providing and fixing in position vitreous chinaware white lavatory suites of approved make (to the approval of Engineer-in-charge) including Rack Bolt Screw Pair 115mm long without CP fittings complete in all respect.						
	Size 630 mm x 450 mm x 830 mm	1	each	3,527			3527.00
10/18.18	Cold twisted detorned (Ribbed/ Tor steel) Bars (Fe 500 grade as per IS 1786-2008) , for R.C.C works, where not including in the complete rate of RCC including bending and binding placing in position complet						
	for shelves of green rooms	0.5	qtl	6497			3248.5
	Difference	0.5	qtl	933.24			466.62
11/17.45a	Providing and fixing aluminum work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/appropriate z sections and other sections conforming to Is: 733 and IS : 1285 of Jindal, Hindalco, Mahavir or equivalent make approved by Engineer in Charge , fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC Plug/neoprene felt etc. aluminum sections shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle, aluminum snap beading for glazing/paneling, C.P.brass/stainless steel screws, all complete as per architectural drawings and the directions of Engineer-In Charge. (Glazing and paneling to be paid for separately) :						
		961.2	kg	352			338342.40

12/13.69a	Providing and fixing, in position concealed G.I. section for wall panelling using board of required thickness fixed on the 'W profile (0.55mm thick) having a knurled web of 51.55mm and two flanges of 26mm each with lips of 10.55 mm placed @ 610mm C/C in perimeter channel having one flange of 20mm and another flange of 30mm with thickness of 0.55mm and web of length 27mm. Perimeter channel is fixed on the floor and the ceiling with the nylon sleeves @ 610mm C/C with fully threaded self-tapping drive all screws. Board is fixed to the 'Wprofile with 25 mm countersunk ribbed head screws @ 200mm C/C, all complete as per the drawing & directions of engineer-in charge the joints of the boards are finished with specially formulated jointing compound and 48mm wide fiber tape to provide seamless finish.					
	Tapered edge calcium silicate board made with calcareous & siliceous materials reinforced with cellulose fiber manufactured through autoclaving process to give stable crystalline structure, Non combustible & spread of Flame (as per BS standard 476 Part IV & VII), Water, Termite & Fungus resistant, compressive strength 25 kg/sq.cm, Bending strength 100 kg/sq.cm. 10 mm Thick					
		260	sqm	1,172		304720.00
13/17.7	Deodar wood planking planed on both sides i.e. based and fixed in position including nails and screws etc.					
f	20 mm thick					
	over existing GI/Al frame for wall panelling,as per acoustical design	25	sqm	3,926		98150.00
14/17.96	Providing and fixing aluminum Wire Mesh including cost of necessary fittings i.e. screws,u Type Beading etc. complete					
	for wall panelling on wool and board as design as per drawing	75	kg	721		54075.00
15/15.79	Providing and fixing chicken mesh for brick work and RCC junction of galvanized low carbon wire, annealed wire of diametre 0.6 to 2.0mm distance between the faces of the hexagon 13 to 50mm complete in all respect					
	to support wool on panel and for wadding	92	sqm	187		17204.00
16/33.20	Providing and fixing in position, 200 mm thick factory made Expanded Polystyrene Core (EPS Core) wall panels consisting of EPS core sandwiched between two Engineered sheets of welded wire fabric mesh duly finished with shotcrete materials on outer faces. The fabric mesh shall be made of 3mm dia G.I.wire mesh with 50 mm pitch in both the directions and on both faces of the wall, kept at 120-135 mm gap and connected by the zig zag G.I. wire of 3 mm dia at alternate row by welding (at an angle ranging from 50- 70 degree) . The EPS core shall consist of 100 mm thick EPS of density not less than 20 kg/ per cum. Both the outer faces of the panel shall be finished by applying the layer of 50 mm thick cement mortar 1:3 {1 cement: 3 coarse sand (not having more than 40% stone chips of size upto 6 mm)} with the help of shotcreting/guniting equipment etc at a pressure not less than 1 bar (100Kn/m2) and both surfaces finished with trowel. Fixing operations of wall panels shall be completed in all respect as per drawings and specifications and under the overall direction of the Engineer-in-charge					
	for wall panelling	24	sqm	3,814		91536.00
17/13.64	Providing and fixing mineral fibre false ceiling tiles at all heights With 16 mm thick beveled tegular mineral fibre Anti-microbial false ceiling tile of size 595X595mm of approved texture, design and pattern. The tiles should have Humidity Resistance (RH) of 99%, Light Reflection > 85%, Thermal Conductivity k = 0.052 - 0.057 w/m K, Fire Performance as per (BS 476 pt - 6 &7)in true horizontal level suspended on interlocking T-Grid of hotdipped all round galvanized iron section of 0.33 mm thick (galvanized @120 gsm) comprising of main T runners of 15x32 mm of length 3000 mm, cross T of size 15x32mm of length 1200 mm and secondary intermediate cross T of size 15x32 mm of length 600 mm to form grid module of size 600x600 mm suspended from ceiling using galvanized mild steel item (galvanised@80gsm) 50 mm long 8mm outer diameter M-6 dash fasteners, 6 mm diameter fully threaded hanger rod up to 1000 mm length and L-shape level adjuster of size 85x25x2 mm, spaced at 1200 mm centre to centre along main 'T'. The system should rest on periphery walls /partitions with the help of GI perimeter wall angle of size24x24X3000 mm made of 0.40 mm thick sheet, to be fixed to the wall with help of plastic rawl plug at 450 mm centre to centre & 40 mm long dry wall S.S. screws. The exposed bottom portionof all T-sections used in false ceiling support system shall be pre-painted with polyester baked paint, for all heights. The work shall be carried out as per specifications, drawings and as per directions of the engineer-in-charge.					
		100	sqm	1,856		185600.00

18/14.101	Providing and laying Laminate wooden flooring (Grade AC4 or AC4+ laminates) 6 mm to 12 mm thick, having a good backing layer made up of plastic laminate or melamine, core made up of medium-density fiberboard (MDF), which is less resistant to impact damage and less resistant to being dented by heavy furniture, having a décor layer to give each floor its appearance and consisting of one or more sheets of paper impregnated with melamine resin and top wear layer having clear aluminum oxide finish that protects the decorative layer & imparts the desired level of sheen, from full gloss to low gloss, duly fixed to the base floor using adhesive as approved by the manufacturer.					
		20	sqm	2,042		40840.00
19/18.4	Wrought iron & Mild steel ladders, framed grills, gratings etc. with ends of bars riveted or molded forged framed window guards, barred iron doors stair case iron railing etc. including cost of bolts and nuts, screws, welding rod complete fixing in position					
	MS framework over stage to support curtains wings, light bars, hvac ducts, false ceiling (wherever necessary) and to maintain all services.	15	qtl	9,140		137100.00
	Difference	15	qtl	1,306.54		19598.10
20/13.83	Providing and fixing in position wall panelling at all heights with integral densified calcium silicate panels/tiles of size 595 x 595mm, having NRC (Noise Reduction coefficient) of 0.50 (minimum) as per IS 8225:1987, Light reflectance of 85% (minimum). Non combustible as per BS:476 (part-4), fire performance as per BS:476 (part 6 & 7), humidity resistance of 100%, thermal conductivity					
		308	sqm	2,332		718256.00
21/13.85i	Providing & fixing false ceiling at all heights with GRG (Glass Fibre Reinforced Gypsum) false ceiling tiles of Size 595x595 mm of approved texture, design and patterns having moisture content less than 2%, humidity resistance of 99%, NRC 0.50 to 0.75 as per IS 8225:1987, Non combustible as per BS 476 (part 4)-1970 and light reflectance of 85% (minimum) to be laid in true horizontal level suspended on inter-locking metal T-Grid of hot dipped galvanized iron section of 0.33mm thick (galvanized @ 120 grams per sqm including both sides) comprising of main-T runners of size 15x32 mm of length 3000 mm, cross - T of size 15x32 mm of length 1200 mm and secondary intermediate cross-T of size 15x32 mm of length 600mm to form grid module of size 600 x 600 mm, suspended from ceiling using galvanized mild steel items (galvanizing @ 80 grams per sqm) i.e. 50 mm long, 8 mm outer diameter M-6 dash fasteners, 6 mm dia fully threaded hanger rod upto 1000 mm length and L shape level adjuster of size 85x25x2 mm. Galvanized iron perimeter wall angle of size 24x24x0.40 mm of length 3000 mm to be fixed on periphery wall / partition with the help of plastic rawl plugs at 450 mm center to center and 40 mm long dry wall wood screws. The work shall be carried out as per specifications, drawing and as per directions of the Engineer-in-Charge.					
i	12 mm thick micro tegular edged semi perforated GFRG (Glass Fibre Reinforced Gypsum) false ceiling tiles of Size 595x595 mm					
		110	sqm	1,338		147180.00
22/17.66	Providing & fixing 32mm thick factory made Internal solid door shutter consisting of solid core particle board of 24mm thickness, lipped with 15mm (5mm x 3) thick x 32mm width on one stiles & top rails & 10mm (5mm x 2) thick x 32mm width on the other stiles & Bottom rails. The panel laminated with 4mm thick termite proof, water proof & fire resistant PVC sheet both side using rubber adhesive on flush door & solvent Cement adhesive on the PVC lipping etc. complete as per manufacturer's specification, conforming to test criteria specified in IS:4020-1998, Drawings and to the entire satisfaction of engineer-in charge	12	Sq mtr	3,991		47892.00
23/17.43c	Providing and fixing hydraulic door closer ISI mark with necessary screw etc. complete					
	I.S.I Designation No. III (size of door 851mm to 1000mm)	2	nos	1,310		2620.00
24/17.74	Providing & fixing 2' stainless steel handles ISI marked on door & window frames complete in all respect as per the directions of Engineer-in-charge.	2	nos	1,568		3136.00
25/17.32g	Providing and fixing ply wood, plain lining, butt jointed including PVC Plug placed at 45 cm to 65 cm centers complete with necessary nails (Frame work shall be payable extra)					
	12mm thick commercial ply wood	10	sqm	1,011		10110.00
26/14.113c	Providing and laying vitrified floor tiles of different sizes in light colour shades made using Double Charge technology (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement: 4 fine sand), complete. (Design is homogenous throughout the tile body).					

	Size 1000x1000 mm						
	for steps of the main hall	200	sqm	1253			250600.00
27/14.149	Providing & laying Epoxy Flooring 2mm thick (overall thickness) with selflevelling with Hi- build epoxy primer 100 micron thickness, self leveling epoxy screed 900 micron thickness, FQ sand and self levelling epoxy top coat having thickness 1000 microns with all materials as mentioned / required to provide desired finish to the entire satisfaction of Engineer in charge.						
		7	sqm	659			4613.00
28/17.105	Providing and fixing aluminum tubular handle bar 32 mm outer dia, 3.0 mm thick & 2100 mm long with SS screws etc Powder coated minimum thickness 50 micron aluminum tubular handle bar complete as per direction of Engineer-in Charge	2	nos	558			1116.00
29/18.39	Providing & fixing 16 gauge stainless steel pipe railing of grade 304 duly fixed on steps with the help of bolts grouted on steps with hand rail and newel post of 50mm dia Stainless steel pipe, Balusters of 40mm dia Stainless steel pipe and guard 3 Nos of 15mm dia Stainless Steel pipe complete in all respect						
		24.5	kg	481			11784.50
30/17.47i	Providing and fixing glazing in aluminum door, window, ventilator shutters and partitions etc. with PVC Plug/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminum snap beading shall be paid in basic item)						
		7	sqm	1035			7245.00
31/17.50	Providing and fixing commercial plywood 12mm thick						
		25	sqm	1,006			25150.00
32/17.92	Providing & Fixing decorative high pressure laminated sheet 1mm thick High Class Texture with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, ISI marked complete in all respect as per the directions of Engineer in-charge.						
		25	sqm	1,372			34300.00
33/34.01	RECESSED AIR CONDITIONER SUPPLY TERMINAL POINT (USED FOR HGW, PVC CONDUIT & HDPE PIPE WIRING SYSTEM WITH MODULAR ACCESSORIES):						
ix	Wiring AC supply terminal point having 1No. 25Amp. universal Socket (shuttered) erected at AC height and 1No. Motor starter 25 Amp. erected at switchboard height.	10	Nos.	654	20%	784.8	7848.00
34/34.08	REPLACEMENT OF WIRES, COVER FRAMES, MODULAR SWITCHES, CONCEALED METAL BOXES AND OTHER ACCESSORIES IN THE EXISTING RECESSED CONDUIT PIPE WIRING SYSTEM (WITH MODULAR TYPE ACCESSORIES) Derived from 34.01:						
(i) a	Wiring fan point (Without fan box)	20	Nos.	666	20%	799.2	15984.00
(ii)	Wiring light point	70	Nos.	376	20%	451.2	31584.00
iv	Wiring 6Amp. wall socket point	15	Nos.	369	20%	442.8	6642.00
v	Wiring 6Amp. Plug control comprising wall socket point	5	Nos.	292	20%	350.4	1752.00
vi	Wiring 16/20Amp. power plug control point	20	Nos.	438.00	20%	525.6	10512.00
35/34.09	PVC INSULATED FR COPPER CONDUCTOR CABLES:						
i	Overall size 1sq.mm (Un-sheathed)	5500	Mtr.	14	30%	18.2	100100.00
ii	Overall size 1.5sq.mm (Un-sheathed)	7500	Mtr.	18	30%	23.4	175500.00
iii	Overall size 2.5sq.mm (Un-sheathed)	4500	Mtr.	27	30%	35.1	157950.00
iv	Overall size 4sq.mm (Un-sheathed)	800	Mtr.	39	30%	50.7	40560.00
v	Overall size 6sq.mm (Un-sheathed)	1200	Mtr.	54	30%	70.2	84240.00

vi	Overall size 10sq.mm (Un-sheathed)	900	Mtr.	88	30%	114.4	102960.00
vii	Overall size 16sq.mm (Un-sheathed)	1000	Mtr.	137	30%	178.1	178100.00
36/34.09 (xii)	Supply and erection of PVC insulated PVC sheathed FR (2Core) round flexible wire with copper conductor cable (ISI marked) confirm to IS:694/1990 left bare in pipe or on surface with cleats of suitable size complete in all respect as desired by the Engineer-in-charge:-						
(b)	Overall size 0.75sq.mm (24/0.20mm), 2Core	200	Mtr.	23	30%	29.9	5980.00
(d)	Overall size 1.5sq.mm (48/0.20mm), 2Core	1000	Mtr.	35	30%	45.5	45500.00
(xiii)	Supply and erection of PVC insulated PVC sheathed (3 core) round flexible wire with copper conductor (FR) cable (ISI marked) confirm to IS:694/1990 left bare in pipe or casing of suitable size complete in all respect as desired by the Engineer-in-charge:-						
(c)	Overall size 2.5sq.mm (50/0.25mm), 3Core	500	Mtr.	76	30%	98.8	49400.00
(xiv)	Supply and erection of XLPE/ PVC insulated PVC sheathed (10 core) unarmoured copper conductor cable (ISI marked) confirm to IS:7098 (PART-I), 1988 loose in the existing trench or pipe with suitable size of copper thimbles/ lugs complete in all respect as desired by the Engineer-in-charge:-						
(a)	Overall size 1.5sq.mm (10 Core)	100	Mtr.	173	30%	224.9	22490.00
37/34.10 C	XLPE INSULATED UN-ARMoured CABLES (ON SURFACE):						
(xxii)	Overall size 25sq.mm (3½ Core) Un armoured (On-Surface)	50	Mtr.	140	25%	175	8750.00
(xxiv)	Overall size 50sq.mm (3½ Core) Un armoured (On-Surface)	100	Mtr.	217	25%	271.25	27125.00
(xxvi)	Overall size 95sq.mm (3½ Core) Un armoured (On-Surface)	150	Mtr.	363	25%	453.75	68062.50
38/34.11	HEAVY GAUGE WELDED CONDUIT PIPES:						
	Supply & erection of Heavy gauge welded conduit pipe (ISI marked) as per IS:9537:Part-II for wiring purposes including bends, junction boxes, Steel hooks, GI saddle clamps and other petty materials etc., where necessary including painting as per PWD General Specifications:-						
(vii)	HGW Conduit Pipe 25mm dia. (1.6mm thick) On Surface	500	Mtr.	107	25%	133.75	66875.00
39/34.12	PVC, HDPE PIPES & PVC FLEXIBLE PIPES:						
(ii)	Heavy Gauge PVC Conduit Pipe 25mm dia. (On Surface)	860	Mtr.	39	40%	54.6	46956.00
(x)	Heavy Gauge PVC Conduit Pipe 25mm dia. (Flushed)	500	Mtr.	48	40%	67.2	33600.00
(xi)	Heavy Gauge PVC Conduit Pipe 32mm dia. (Flushed)	400	Mtr.	66	40%	92.4	36960.00
40/34.15	PVC CHANNEL (uPVC TRUNKING):						
(xxxix)	Supply and erection of PVC Channel (uPVC Trunking) with cover of various sizes (On Surface) on wall, Flat angle, internal & external angle, Flat Tee, End cap and mounting boxes including the cost of joint cover, fixing and other petty material etc.:-						
(b)	PVC Channel (uPVC Trunking) 100mm x 50mm	29	Mtr.	734	15%	844.1	24478.90
41/34.16 A	MINIATURE CIRCUIT BREAKERS:						
(ii)	MCB Single Pole 6-32amp. (10kA, Curve-C)	40	Nos.	134	35%	180.9	7236.00
(iii)	MCB Single Pole 40amp. (10kA, Curve-C)	44	Nos.	278	35%	375.3	16513.20
(vii)	MCB Double Pole 40amp. (10kA, Curve-C)	20	Nos.	555	35%	749.25	14985.00
(xii)	MCB Triple Pole 50, 63amp. (10kA, Curve C)	8	Nos.	932	35%	1258.2	10065.60
(xvi)	MCB Four Pole 50, 63amp. (10kA, Curve-C)	4	Nos.	1231	35%	1661.85	6647.40
42/34.17	SHEET METAL DOUBLE DOOR DISTRIBUTION BOARD FOR MCB's/RCBO's/ RCCB's:						
(vi)	TP&N Horizontal Double Door Distribution Board 6 way each	2	Nos.	2965	15%	3409.75	6819.50
(vii)	TP&N Horizontal Double Door Distribution Board 8 way each	2	Nos.	3540	15%	4071	8142.00

(xvi)	Supply and erection of sheet metal double door vertical distribution boards IP 43-IP09 metal door (dust protected) as per IS:8623-1&3, IEC 61439-1&3 suitable for flush mounting with fully insulated copper busbars for each phase, 2 Nos. shrouded neutral bars, 2Nos. earth bars, cement spill protector, color-coded interconnecting wire set, cable ties, blanking plates and circuit identifications label and of required no. of ways for mounting MCCB's as incomer and outgoings SP/TP miniature circuit breakers in the distribution board as per PWD General specifications including connections with suitable size of thimbles and bonding to existing earth etc.:-						
(g)	TP&N Double Door Vertical DB's 4 way each (With provision of FP MCCB 200- 250amp.)	2	Nos.	10700	15%	12305	24610.00
43/34.23 C	MCCB's (MOULDED CASE CIRCUIT BREAKER):						
(vi)	MCCB Four Pole 250amp., 415volts, ≥25kA Fixed Magnetic and Adjustable Thermal Setting	2	Nos.	9667	40%	13533.8	27067.60
44/34.25	CABLE TRAY:Supply and erection of MS perforated cable tray (MS Sheet thickness 2mm) with DA gray paint on the existing surface with the help of MS angle iron support (to be painted with approved paint) of size 50mm x 50mm x 6mm thick to be fixed with fastners/ nut & bolts etc., complete in all respect as desired by the Engineer-in-charge and as per PWD General Specifications:-						
(i)	Cable Tray Size 150mm x 50mm x 50mm (2mm thick)	800	Mtr.	723	40%	1012.2	809760.00
(ii)	Cable Tray Size 300mm x 50mm x 50mm (2mm thick)	650	Mtr.	987	40%	1381.8	898170.00
		Total CSR Items					6159180.69
NS Items							
	AUDIO VIDEO						
1	Supply, installation, testing &Commissioning of stage FOH clusters having 14"/12"/10 or better LF driver and multiple MF/HF drivers, Bi-amplified 2- or 3-Way array loudspeaker system, with Individual Module free field Frequency Range (-10dB) of 60Hz - 18kHz / (-3db) of 80Hz - 18kHz) or better & Power Handling of >= 400W LF + 50W MF/HF. The Loudspeaker module shall have a Sensitivity of LF: 98 dB-SPL and Max. SPL (Peak) of 130 db or better. It should have a Horizontal near dispersion pattern of 100° or better, vertical dispersion of the array shall be 70 degrees or better. The Modules shall be of Baltic birch plywood construction with internal metal bracing. All OEMs shall offer a suitable number of modules to achieve the required vertical angle (Minimum of 4 array modules) complete in all respect with required accessories as desired by Engineer- In- Charge. Make :- Bose/QSC/JBL /Renkus-Heinz.	2	sets	Rates to be quoted by contractor			
2	Supply, installation, testing & Commissioning of OEM flying array frame and other necessary hardware for suspending main speaker arrays. All necessary hardware to be included to achieve a safety factor of 8:1 or better complete in all respect with required accesories as desired by Engineer- In- Charge. Make :- Bose/QSC/JBL/ Renkus-Heinz	2	sets	Rates to be quoted by contractor			
3	Supply, installation, testing & Commissioning of a single 18" or dual 15" subwoofer. The loudspeaker shall meet the following criteria: usable Frequency Range (-10 dB) of 35 Hz - 120/200Hz or better. It should have an axial Sensitivity of > = 92dB (1W/1m) or more delivering a free field Max. Calculated SPL (peak) of>=127 db or better. The loudspeaker should have a nominal impedance: 4/8 ohm and continuous Power Handling of 750W or more; Complete with installation accessories as per the site requirement. Make :- Bose/QSC/JBL /Renkus-Heinz.	4	Nos	Rates to be quoted by contractor			
4	Supply, installation, testing & Commissioning of OEM flying array frame and other necessary hardware for suspending subwoofer complete in all respect with required accesories as desired by Engineer- In- Charge. Make :- Bose/QSC/JBL/ Renkus-Heinz	2	Nos	Rates to be quoted by contractor			
5	Supply, installation, testing and commissioning of two-way 5.25-inch or better surface mount loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency Range (-10 dB) of 90Hz - 18 kHz / Frequency Range (-3 dB) of 100 Hz to 20 kHz or better; Nominal Dispersion : 90°H x 50°V or better; Power handling of 400W peak or more; Sensitivity : 86 dB or better and the Max SPL : 116dB Peak or more with a Nominal impedance of 8/16 ohms and Standard wall mount brackets shall be included complete in all respect with required accessories as desired by Engineer- In- Charge. Make :- Bose/QSC/JBL /Renkus-Heinz.	4	Nos	Rates to be quoted by contractor			

6	Supply, installation, testing & Commissioning of Passive two-way point source loudspeaker with a single 10"/12" LF driver and compression driver with 1.5" or better. Frequency Range (-10dB) of 80Hz - 18kHz or better & long term Continuous Power Handling of 250W or better. The Loudspeaker module shall have a Max. SPL (Peak) of 122 or better. It should have Horizontal dispersion pattern of 90° or better, vertical dispersion of the loudspeaker shall be 50 degrees or better. The loudspeaker shall be enclosed in a Multi angle plywood enclosure with perforated steel grille. complete in all respect with required accessories as desired by Engineer- In- Charge. Make :- Bose/QSC/JBL /Renkus-Heinz.	3	Nos	Rates to be quoted by contractor
7	Supply, installation, testing and commissioning of Full range 4.5-inch or better loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency range (-10dB) of 70Hz to 17kHz; Power handling of 160 Watt peak; Nominal dispersion of 90°(H) × 80°(V); Sensitivity of 85 dB SPL and Max SPL of 108 dB SPL peak or better; Nominal impedance of 8 ohms and Integral multi-tap Transformer with selectable tap settings of 3/5/10/20/40W@70V & 100V or better. The loudspeaker system shall be enclosed in engineered-plastics and a powder-coated steel grille. UL-1480 rated and EN54-24 compliant for Life safety/VA applications. Make :- Bose/QSC/JBL /Tannoy.	4	Nos	Rates to be quoted by contractor
8	Supply, installation, testing and commissioning of Two-way Small Format high SPL surface mount loudspeaker. The loudspeaker shall meet the following performance criteria: Frequency Range (-10 dB) of 80 Hz - 18 kHz or better; Nominal Dispersion : 100°H x 60°V, Long term Power handling of 700W peak or more; Sensitivity : 92 dB; Max SPL : 123dB Peak; Nominal impedance of 8 ohms. Dual 6.5-inch or single 8" woofer or better; Single 1-inch voice coil high-frequency compression driver; U-bracket shall be included complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Bose/QSC/JBL/Renkus-Heinz/Tannoy.	4	Nos	Rates to be quoted by contractor
9	Supply, installation, testing & Commissioning of GOOSENECK WITH BASE MIC cardioid electret condenser microphone with 500mm Length or better and a filter in the microphone grille for suppressing wind and pop noises. A programmable button shall operate in the operating modes ON/OFF, Push-To-Talk and Push-To-Mute modes. on board selectable low-cut filter to suppress low frequency noise. The LED ring to display the microphone status may be deactivated when needed. The microphone shall operate with phantom power P12, P24 or P48. A preamp with shall be integrated in the base. The housing shall be black, free from reflections and completely made of metal. The frequency response shall be 50 to 19,000 Hz. The open circuit voltage shall be 17 mV/Pa or better. The nominal impedance shall be around 200 ohms complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Beyerdynamic/Shure/Sennheiser/AKG	2	Nos	Rates to be quoted by contractor
10	Supply, installation, testing & Commissioning of wireless Lapel microphone, with (UHF) Diversity receiver, 12 Channel Preset or better, Display on Transmitter and Receiver , RF Power output 30/50mW or Better , Polar Pattern :- Omnidirectional, Carrier frequency range 500Mhz to 865Mhz, Frequency response 45--15kHz, Mute Button on Transmitter, Battery Operation time Minimum 8hr , Should have Charging Contact in Body pack Transmitter, Receiver dynamic range 106dB (A-weighted). complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Beyerdynamic/Shure/Sennheiser/AKG	4	Nos	Rates to be quoted by contractor
11	Supply, installation, testing & Commissioning of wireless Handheld microphone, with (UHF) Diversity receiver, 12 Channel Preset or better , Display on Transmitter and Receiver , RF Power output typ.30/50mW or Better , THD, total harmonic distortion < 1 % , Signal-to-noise ratio > 103 dB(A)Polar Pattern :- Omnidirectional, Carrier frequency range 548Mhz to 865Mhz, Frequency response (Microphone) 80...16000 Hz , Mute Button on Transmitter, Battery Operation time Minimum 8hr , Sound pressure level (SPL) 149 dB complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Beyerdynamic/Shure/Sennheiser/AKG	4	Nos	Rates to be quoted by contractor
12	Supply, installation, testing & Commissioning of 4 way Antenna Distribution System. The Antenna Splitter should support up to 4 Receivers, it should split signal from 2 Antennas to 4 wireless microphones receivers or more ,it should be able to power up to 4 connected receivers ,full true diversity support, should support UHF range from 470 MHZ to 870 MHZ or more, Should come with power supply as required, should be from the same OEM as wireless microphones for 100 % compatibility etc complete in all respect with required accessories as desired by Engineer- In- Charge. Make:-Beyerdynamic/Shure/Sennheiser/AKG	2	Nos	Rates to be quoted by contractor

13	Supply, installation, testing & Commissioning of Passive Directional Antenna ,the antenna should come built-in 3 dB of more gain, should be from the same OEM as wireless microphones for 100% compatibility etc complete in all respect with required accessories as desired by Engineer- In- Charge. Makes:- Beyerdynamic/Shure/Sennheiser/AKG	2	Nos	Rates to be quoted by contractor
14	Supply, installation, testing & Commissioning of Instrument Microphone with high-frequency reproduction Polar Pattern: Cardioid, Frequency response : 33-19,000 Hz, Open circuit voltage : 2.7 mV/Pa (-51.4 dBV), Nominal impedance : 600 Ω, Load impedance : ≥ 2 kΩ, Connection : XLR, 3-pin, male, etc complete in all respect with required accessories as desired by Engineer- In- Charge. Makes:- Beyerdynamic/Shure/Sennheiser/AKG	4	Nos	Rates to be quoted by contractor
15	Supply, installation, testing & Commissioning of Wired Vocal Microphone with On/Off switch, Transducer type: Dynamic, Polar pattern: Super cardioid, Frequency response: 30 - 18,000 Hz, Open circuit voltage : 2.5 mV/Pa (-52 dBV), Nominal impedance 600 Ω, Connection: XLR, 3-pin, male, etc. complete in all respect with required accessories as desired by Engineer- In- Charge. Makes:- Beyerdynamic/Shure/Sennheiser/AKG	5	Nos	Rates to be quoted by contractor
16	Supply, installation, testing & Commissioning of black anodized, table mic stands complete in all respect with required accessories as desired by Engineer- In- Charge.	4	Nos	Rates to be quoted by contractor
17	Supply, installation, testing & Commissioning of black anodized, floor mic stands complete in all respect with required accessories as desired by Engineer- In- Charge.	6	Nos	Rates to be quoted by contractor
18	Supply, installation, testing & Commissioning of 16 in 8 out Analog I/O Digital stage box as the same OEM and compatible with offered Digital Mixer. Shall offer pre-amp control and a redundant mode connection complete in all respect with required accessories as desired by Engineer- In- Charge. Make: Yamaha/Allen & Health/Digico/Soundcraft.	1	Nos	Rates to be quoted by contractor
19	Supply, installation, testing & Commissioning of Digital Audio Mixer with 32-40 input Digital Mixing Console and USB interface and 32 programmable Preamps, 24 or better Motorized Faders, 40 DSP input channels (32 mono inputs and 4 stereo channels/returns), Channel LCD's, FireWire/USB Audio Interface and iPad/iPhone* Remote Control include I/O Box with 16 Remote-Controllable Preamps, Including Mini Stage box 16 or 32 Channel combine high-quality components with a streamlined design, making it easy to add multiple channels of remote-controlled I/O to Digital mixing console complete in all respect with required accessories as desired by Engineer- In- Charge. Make: Yamaha/Allen & Health/Digico/Soundcraft	1	Nos	Rates to be quoted by contractor
20	Supply, installation, testing & Commissioning of Dante Digital Audio I/O card for offered digital mixer. Shall offer gigabit redundant Ethernet connection ports for bidirectional audio upto 84x64 channels. Make: Yamaha/Allen & Health/Digico/Soundcraft	1	Nos	Rates to be quoted by contractor
21	Supply, installation, testing & Commissioning of AEC capable Digital Audio Conferencing Processor with at least 12 AEC Mic/Line inputs & 8 analog outputs, 24 Bit A-D and D-A Convertors; Sampling Rate : 48 kHz; THD : < 0.002 % or better ; Frequency Response 20 Hz - 20 kHz ;Dynamic Range > 115 dB or better; 5 Control Inputs and Outputs; RS-232 and Ethernet Port for third party Control and Monitoring; 32x32 or more Bidirectional DANTE/Digital Audio Networking ports, Shall include standard Connectivity features like VOIP, POTS, USB Audio etc. inbuilt DSP features like Conference room Routers, Input Equalizers, Router, Band Pass filter, Output Equalizer, Delay, Limiters, gates, Source selectors etc. Shall Support at least 15 remote Zone controllers complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Bose /QSC/BSS/Biamp	2	Nos	Rates to be quoted by contractor
22	Supply, installation, testing & Commissioning of 8 channel class D Networkable Power amplifier with a Max Output Power of 8x500W@8 ohms, or bridged mode output power of 4x 1000W @ 8/4 ohms. 20Hz - 20 KHz, SNR of 102dB and THD + N of <0.4% with built in protection such as Limiters, Temperature, DC, Short Circuit, Peak Current Limiters, Turn on delay etc. Built in DSP for Matrix routing, Speaker equalization, Delays, Array EQs etc complete with Ethernet Port for Network Control, programming and monitoring. complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Bose/QSC/Crown/Labgruppen/Powersoft	5	No	Rates to be quoted by contractor

23	Supply, Installation, testing and commissioning of integrated high impedance Class D Dual Zone Amplifier with output power of 2 x 120 W @ 70/100 V ; Frequency Response - 55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz) ; THD+N - ≤1 % (at full rated power); Channel Separation (Crosstalk) - ≤-60 dBV (below rated power, 1 kHz); A/D and D/A Converters - 24-bit / 48 kHz; Audio Latency - 10.4 ms - (any input to speaker output or aux output); THD <0.3% at rated power. Channel Separation ≤ -60 dBV (below rated power, 1 kHz); Dynamic range > 88 dB. Maximum Input Level : +10 dBV or better. 1 balanced page/priority input, 3 unbalanced line inputs; built in loudspeaker EQs. Shall include output for expansion amplifier and remote controller (Wired) for source as well as volume control complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Bose/QSC/Crowm/Labgruppen/Powersoft	1	Nos.	Rates to be quoted by contractor
24	Supply, installation, testing & Commissioning of custom Floor Box for stage with 4 power, 1 HDMI, 2 XLR input, 1 HDMI out, 2 LAN port complete in all respect with required accesories as desired by Engineer- In- Charge. make:- Custom/EIC approved	2	Nos.	Rates to be quoted by contractor
25	Supply, installation, testing & Commissioning of 3' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Crestron/Extron/Lightware/AMX/Kramer	48	Nos.	Rates to be quoted by contractor
26	Supply, installation, testing & Commissioning of 6' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. Make:-Crestron/Extron/Lightware/AMX/Kramer	20	Nos.	Rates to be quoted by contractor
27	Supply, installation, testing & Commissioning of 9' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. Make:-Crestron/Extron/Lightware/AMX/Kramer	15	Nos.	Rates to be quoted by contractor
28	Supply, installation, testing & Commissioning of 15' HDMI male(M) to HDMI Male (M) Cable with 28 AWG copper wire construction, 18 Gig HDMI 2.0 4K@60Hz and HDR or better, Full ATC Certification, UL/CSA listed for in-wall use, Gold plated connectors complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Crestron/Extron/Lightware/AMX/Kramer	10	Nos.	Rates to be quoted by contractor
29	Supply, installation, testing & Commissioning of minimum 14 AWG or thicker Speaker Cable with copper conductors and PVC Jacket complete in all respect with required accessories as desired by Engineer- In- Charge. Make :- Make:-Crestron/Extron/Kramer	900	mtr.	Rates to be quoted by contractor
30	Supply, installation, testing & Commissioning of 24 AWG or better CAT6A support 10 gig data LSZH cable complete in all respect with required accessories as desired by Engineer- In- Charge. Make- Crestron/Extron/Derwiser/AMX/Kramer	1000	mtr.	Rates to be quoted by contractor
31	Supply, installation, testing & Commissioning of Shielded microphone cable. 2 core + Shield, 23 AWG or better complete in all respect with required accessories as desired by Engineer- In-Charge. Make :- Crestron/Extron/Kramer	1200	mtr.	Rates to be quoted by contractor
32	Supply, installation, testing & Commissioning of USB Active cable of 10 mtr. or more length complete in all respect with required accessories as desired by Engineer- In- Charge. Make :- Crestron/Extron/Lightware/Kramer/AMX	2	Nos.	Rates to be quoted by contractor
33	Supply, installation, testing & Commissioning of LMR Cable with required connectors for Antennas complete in all respect with required accesories as desired by Engineer- In- Charge.	30	mtr.	Rates to be quoted by contractor
34	Supply, installation, testing & Commissioning of 42 U Equipment Rack, Locakable front glass door, cooling facility, internal wiring, front glass door, heat dessipation fans, movement wheels, power distribution units & equipment shelves as required, fully welded construction for strength. Extra-wide rackrail for cable pass-throughs to facilitate front-to-rear cabling complete in all respect with required accesories as desired by Engineer- In- Charge. Make:- Netrack/APW President/Rittal/valrack	2	Nos.	Rates to be quoted by contractor
35	Supply, installation, testing & Commissioning of DLP Laser Projector, 1920X1200 WUXGA native resolution, 13,500 lumens or better laser light source projector, Contrast Ratio - 100000:1, with HDMIx2 , 1 HDBbaseT, Control RS232/Ethernet. Lens throw ratio 1.85 : 1 to 2.44 :1 or better, including Compatiable Projector Mount as per site requierment design complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Barco/Christie/Digital projection	1	Nos.	Rates to be quoted by contractor

36	Supply, installation, testing & Commissioning Cyclorama:MS. Frame structure: 35mm dia MS. Pipe Frame structure with 25 mm MS pipe Ribs between the frame pipes. Structure to be raised from stage floor - 150 to 200 mm; back wall clearance as per drawings.MS Frame structure to be well supported from back wall and /or ceiling.Screen Fabric : White Matt Fabric. Screen to be made as per the maximum screen size possible on the stage with minimum 200mm black border on all sides for fixing of Eyelets on all sides. Cyclorama to be stretched and tightened from all sides securely using cotton ropes. Appx. Size:- 8 mtrx 5 mtr complete in all respect with required accesories as desired by Engineer- In-Charge. (Make: GTC, Harkness, Effectron)	1	Nos.	Rates to be quoted by contractor
37	Supply, installation, testing & Commissioning of Smart metallic podium with space for optional gooseneck mic , separate drawer for documents, fitted with i7 12 Gen PC (8GB RAM, 500GB SSD, inbuiltWi-Fi enabled, and licensed Window 10 Professional pre loaded with 4 USB port, LicensedMicrosoft word, antivirus and other required softwares for functioning of auditorium softwares, HDMI port and audio port, fitted with 23" Interactive Pen Touch Monitor (Wacom or Equivalent) for Live annotation with tilt motorized mechanism. FHD / UHD Resolution. Brightness: 250 cd/m2, contrast ratio: 1000:1 or better. Viewing angle : 178°(v) 178°(h) or better. Input: 1x HDMI. USB Interface. To be supplied with complete accessories wireless keyboard and wireless mouse with 1 kVA double battery or better capacity UPS complete in all respect with required accessories as desired by Engineer- In- Charge. Podium design with logo has to be approved by EIC before supply. Make:- PC (HP/DELL/IBM) Make :- UPS (APC/Microteck/Luminous)	2	Nos.	Rates to be quoted by contractor
38	Supply, installation, testing & Commissioning of 55"4K (3,840 x 2,160), Direct LED Professional Display with 4K resolution, Native Contrast ratio upto 1100:1, Response time 8ms or better, Peak Brightness 500 cd/m² or better, 4K 24/7 Portrait , HDCP 2.2 (HDMI) / RS232 / USB / RJ45 / Wi-Fi with In-Built Bluetooth / 10W Speakers optional Android™ OS system, Viewing angle 178 degree or better, Pro Mode, complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Sony/Samsung/LG.	2	Nos.	Rates to be quoted by contractor
39	Supply, installation, testing & Commissioning of tilt capable, height adjustable floor cart for confidence monitor display of reputed make and Shall have integrated VESA mounts for display complete in all respect with required accesories as desired by Engineer- In- Charge.	2	Nos.	Rates to be quoted by contractor
40	Supply, installation, testing & Commissioning of 43"4K (3,840 x 2,160), Direct LED Professional Display with 4K resolution, Native Contrast ratio upto 1100:1, Response time 8ms or better, Peak Brightness 500 cd/m² or better, 4K 24/7 Portrait , HDCP 2.2 (HDMI) / RS232 / USB / RJ45 / Wi-Fi with In-Built Bluetooth / 10W Speakers optional Android™ OS system, Viewing angle 178 degree or better, Pro Mode, complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Sony/Samsung/LG.	2	Nos.	Rates to be quoted by contractor
41	Supply, installation, testing & Commissioning of 70"/75" 4K (3,840 x 2,160), Direct LED Professional Display with 4K resolution, Native Contrast ratio upto 1100:1, Response time 8ms or better, Peak Brightness 500 cd/m² or better, 4K 24/7 Portrait , HDCP 2.2 (HDMI) / RS232 / USB / RJ45 / Wi-Fi with In-Built Bluetooth / 10W Speakers optional Android™ OS system, Viewing angle 178 degree or better, Pro Mode, complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Sony/Samsung/LG.	1	Nos.	Rates to be quoted by contractor
42	Supply, installation, testing & Commissioning of 4K/UHD 60 fps PTZ Camera specialized for video conferencing having minimum 20x optical zoom, 12x Digital Zoom, 1/2.5" 8.5 MP CMOS Sensor. featuring HDMI/ SDI/Ethernet output, Control: RS232/Ethernet. Including wall/ceiling mounting accessories complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Lumens/Bosch/Axis/Pelco	3	Nos.	Rates to be quoted by contractor

43	Supply, installation, testing & Commissioning of hardware-based Video Recording and streaming device for recording all kind of meetings including video conference. 02 or more HDMI input, 01 or more HDMI/DVI input. one or more analog video input. one or more balanced/unbalanced analog audio input, Minimum two window Picture-in-Picture (PIP), Picture by Picture. Resolution minimum 1080P@30fps or better. Built in or External storage of minimum 30GB and option for external and network storage. Should also support built in streaming. PUSH/PULL, RTSP/RTMP, Unicast/Multicast. RS232/LAN control complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Extron/Lumens/Mediasite/Aten	1	Nos.	Rates to be quoted by contractor
44	Supply, installation, testing & Commissioning of 2 gang Wall plate type AVOIP transmitter, 4K @60 Hz, 4:4:4, HDMI/VGA Auto switching, Encode audio / video, USB, IR, RS232, and power over IP network up to 100m, resolutions up to 4K ,4:4:4, HDR10, and multi-channel Audio, HDCP 2.2 compliant, Extend USB2.0 full speed up to 12Mbps, PoE or DC power input, 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps up to 850Mbps , analog audio input port for audio embedding, RS232 port as pass through to control a third party device, USB KVM inbuilt complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer	1	Nos.	Rates to be quoted by contractor
45	Supply, installation, testing & Commissioning Box type HDMI AVOIP Transmitter, 4K @60 Hz, 4:4:4, Encode audio / video, USB, IR, RS232, and power over IP network up to 100m, resolutions up to 4K 4:4:4, HDR10, and multi-channel Audio, HDCP 2.2 compliant, Extend USB2.0 full speed up to 12Mbps, PoE or DC power input, 1 gigabit network infrastructure using JPEG2000 encoding with a variable data rate at an average of 250 Mbps up to 850Mbps , analog audio input port for audio embedding, RS232 port as pass through to control a third party device, USB KVM inbuilt. 7.1 multichannel audio, Up & Down scaling capability, Supports video walls with bezel compensation in and out for 2 way IR control complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer	8	Nos.	Rates to be quoted by contractor
46	Supply, installation, testing & Commissioning of AVOIP Receiver (Decoder) with industry standard codec. Shall support HDMI signals up to 4K 4:4:4 HDR, HDCP 2.2 compliant, and 7.1 multichannel audio, Upscaling upto 4K resolutions. RS232 port, bidirectional IR support. Video wall mode with Bezel compensation, USB connection passthru. Integrated scaler with up & down scaling capability up to 4K30 4:4:4 POE powered, variable or fixed data rate complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer	8	Nos.	Rates to be quoted by contractor
47	Supply, installation, testing & Commissioning of Controller for AVOIP devices having Supports resolutions up to 4K@60 4:4:4 with HDR, Integrated up or down scaling for maximum display compatibility, HDMI connectivity for source/sink I/O & CEC ,HDMI Loop output on encoder, Low latency & fast switching time, RS-232 pass-through ports, Fully compatible with 3rd party control systems, Audio embed/de-embedding ports, Supports most multi-channel audio formats, USB, RS-232 & Audio may be routed independent of the video, Decoder equipped with an 4K auto-scaler, Uses JPEG2000 video codec, Dante Audio Support, Configuration license upto 50 IP equipment complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Crestron/Extron/Lightware/AMX/Kramer	1	Nos.	Rates to be quoted by contractor
48	Apple lightning to HDMI female, Apple USB-C to HDMI female, generic USB-C to HDMI complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer/Apple	2	Nos	Rates to be quoted by contractor
49	Supply, installation, testing & Commissioning of 10-11 inch Multi-Touch display (iPad) with IPS technology with Liquid Retina display, Resolution: 2388x1668-pixel resolution at 264 pixels per inch (ppi), 600 nits brightness. Should be provided with docking station complete in all respect with required accessories as desired by Engineer- In- Charge. Make:- Apple or equivalent make approved by EIC	1	Nos	Rates to be quoted by contractor
50	Supply, installation, testing & Commissioning of Fully Programmable 10" wall mount capacitive touchscreen interface for switching and control of AV equipment. TFT Active matrix Color LCD display, Resolution 1280x800 or higher, Color depth : 24 bit, 16.7 million colors or higher, Brightness: 400 nits (cd/m2) or higher, Viewing angle: ±80° horizontal, ±80° vertical or more, Capacitive Touch screen. Memory: 4GB Flash, SD RAM: 2 GB. 10/100/1000Base-T female RJ-45 connector. Shall be supplied with Power supply or POE injector along with wall mounting accessories. Shall meet regulatory compliances: CE, c-UL, UL complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer	1	Nos	Rates to be quoted by contractor

51	Supply, installation, testing & Commissioning of fully programmable 6-8 button wall mount automation system controller, shall work over standard RJ-45 point to point cabling complete in all respect with required accessories as desired by Engineer- In- Charge. Make: Crestron/Extron/Lightware/AMX/Kramer	1	Nos	Rates to be quoted by contractor
52	Supply, installation, testing & Commissioning of IR receivers compatible with offered automation system. Complete with necessary cable complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer	4	Nos	Rates to be quoted by contractor
53	Supply, installation, testing & Commissioning of AVoIP system controller with RS-232 & Network interfaces. Complete with subscription licenses for all end-points for a period of at least 10 years. Should be Software manageable, expandable complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer	1	Nos	Rates to be quoted by contractor
54	Supply, installation, testing & Commissioning of gigabit L II with minimum 48 ports POE switch or better or as required for auditorium design managed switch with combo SFP ports. Should be Software manageable, expandable complete in all respect with required accessories as desired by Engineer- In- Charge. MAKE :-Netgear/Cisco/Allied Telesis	2	Nos	Rates to be quoted by contractor
55	Supply, installation, testing & Commissioning of of HDMI to USB-C converter. Shall support 4K resolutions complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer	1	Nos	Rates to be quoted by contractor
56	Supply, installation, testing & Commissioning of USB extender set that extends computer USB 1.1 and USB 2.0 signals up to 100m (330 ft) over twisted pair cabling to four remote devices. The extender set utilizes inexpensive twisted pair cabling and has a throughput of up to 480Mbps. The extender set is perfect for keyboard and mouse extension, remote data ports, minimum 4 USB A on transmitter and 1 USB- B on receiver, security applications and interactive white board applications complete in all respect with required accessories as desired by Engineer- In- Charge. make:- Crestron/Extron/Lightware/AMX/Kramer	1	Nos	Rates to be quoted by contractor
57	Supply, installation, testing & Commissioning of Motorised winch to use as Lighting bar of 7.5 mtr., made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided with Necessary pulley, guide pulleys, GI wire rope with winding drum, Specially designed compact gear box, 0.5/1.0HP AC motor, Upper and lower limit controller, Average Length of Bar 10 mtr, With cable retractor & cable trays complete in all respect with required accessories as desired by Engineer- In- Charge (Make: Leksa, Canara, Effectron)	3	nos	Rates to be quoted by contractor
58	Supply, installation, testing & Commissioning of Fixed Light bar of 10 mtr. length, made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided With cable trays complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	2	Nos	Rates to be quoted by contractor
59	Supply, installation, testing & Commissioning of Motorised winch to use as Utility bar of 8 mtr. length, made using 40NB dual barrel undergone through various chemical treatment to keep them rust free and finished with two coats of Red Oxide primer and one coat of enamel paint and provided with Necessary pulley, guide pulleys, GI wire rope with winding drum, Specially designed compact gear box, 0.5/1.0HP AC motor, Upper and lower limit controller, Average Length of Bar 10 mtr complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	1	Nos	Rates to be quoted by contractor
60	Supply, installation, testing & Commissioning of Direct lighting distribution board panel having incomer 100 A 4 pole MCCB or 63 A 4pole/TPN , outgoing 1 no. 32 A TP MCB & 72 nos 10-16 Amp SP MCBs. Necessary phase indicator lamp, meter , and Busbar to be provided. The panel must have undergone through various chemical treatment to keep them rust free and duly powder coated in Siemens Grey finish. MCB's to be used Siemens, schnieder, ABB, Legrand complete in all respect with required accessories as desired by Engineer- In- Charge (Make: Leksa, Canara, Effectron)	1	Lot	Rates to be quoted by contractor
61	Supply, installation, testing & Commissioning of MS lighting junction box made up of 16SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finish and 5/15A Anchor Socket with suitable glands complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	35	Nos	Rates to be quoted by contractor

62	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 16 SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finish and fitted with 3/5 pin XLR DMX connector complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	16	Nos	Rates to be quoted by contractor
63	MS Fabricated power junction box (PJB) for terminating the motor wires undergone through various chemical treatment to keep them rust free and duly finished with black powder coated paint in black matt finish complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	9	Nos	Rates to be quoted by contractor
64	Supply, installation, testing & Commissioning of Well designed and engineered Wall mount 10 feeder Motor Control Centre Panel with 125A McCabe as incomer and 32A TP MCB as outgoing necessary meterings, contactors etc. to control the Light Bars, Frill Bars etc. (Make: Leksa, Canara, Effectron)	1	Nos	Rates to be quoted by contractor
65	Supply, installation, testing & Commissioning of Well designed and engineered Wall mount 2 feeder Remote Control Panel with necessary indicators and terminal block for remote operations of curtains complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	1	Nos	Rates to be quoted by contractor
66	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 22SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly powder coated and fitted with 3/5 pin XLR DMX IN connector for console complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	1	Nos	Rates to be quoted by contractor
67	Supply, installation, testing & Commissioning of MS sheet metal fabricated power junction box undergone through various chemical treatment to keep them rust free and duly powder coated and fitted with 2 10amps 3 pin IEC socket, ON/OFF switch and necessary glands to power splitters and console complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	2	Nos	Rates to be quoted by contractor
68	Supply, installation, testing & Commissioning of MS sheet metal fabricated DMX junction box made up of 22SWG CRCA sheet undergone through various chemical treatment to keep them rust free and duly powder coated and fitted with 3/5 pin XLR DMX IN connector for console complete in all respect with required accessories as desired by Engineer- In- Charge.(Make: Leksa, Canara, Effectron)	1	Nos	Rates to be quoted by contractor
69	Supply, installation, testing & Commissioning of 200W LED Fresnel spot Light with 200mm dia German Lens with Lamp power - 200W, LED Type : COB LED, Color Temperature 3200K, CRI > 95, spot - Flood Focus adjustment : Mototrised, Beam angel - 10° - 50°Power Rating - IP 20, Control Manual, DMX0-100% through manual and DMX, Channels - 2 channel DMX 512, Power Supply - 100-240 V AC, 50/60nHz CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge.(Make: Leksa, Canara, Effectron)	6	Nos	Rates to be quoted by contractor
70	Supply, installation, testing & Commissioning of 200W LED PARCAN with below specification : Lamp power - 200W, LED Type : COB LED, Color Temperature CW/WW, Power Rating - IP 20, Control Manual, DMX, Channels - 2 channel DMX 512, Power Supply - 100- 240 V AC, 50/60nHz, CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	6	Nos	Rates to be quoted by contractor
71	Supply, installation, testing & Commissioning of 54x3W LED par light complete with 8-channel DMX 512, high brightness mixing color evenly, stable performance with sound active auto, DMX, and power and DMX loop in and out option, undergone through 7 Tank chemical treatment to keep them rust free and, duly powder coated in black matt texture finish and technical specifications as below. Lamp - 54 x 3W RGBW LED, Power consumption - 150W, Power supply - 230/240V AC, Power cable - 3 core 1.5 sq. mm. copper PVC insulated, Channels - 1 Channel DMX-512, Beam angle - 25° (15°, 45° optional) Function - Manual dimming, DMX modes of operation. The work shall be completed in all respect as per sound engineering practice & Direction of EIC. (Make: Leksa, Canara, Effectron)	6	Nos	Rates to be quoted by contractor
72	Supplying Installation testing & Commissioning of LED Bar Light having RGBWA output, 72 LED's 16R+ 16G+16B+ 8W+16A RGBWA LEDs, Angle : 30°x60°, Strobe + Duration Effect Engine, DMX- 512, Color LCD intuitive menu system, 90 - 240VAC, 240W - Power Consumption, complete in all respect with required accessories as desired by Engineer- In- Charge (Make: Leksa, Canara, Effectron)	4	Nos	Rates to be quoted by contractor

73	Supply, installation, testing & Commissioning of 2x2 blinder matrix fixture with advanced COB LED technology light with Frequency : 50- 60Hz, Power Consumption: 240W LEDs Qty : 4 pieces Light Color: Single color warm white (3200K)• Lifetime: Over 50,000 hours• Dimmer: 0~100% linearly adjustable Beam Angle: 30 degree Control mode: DMX512,Master/Slave, Auto Run, Sound active. IP Grade: IP20 Net Weight: 5kgs The work shall be completed in all respect as per sound engineering practice complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	4	Nos	Rates to be quoted by contractor
74	Supply, installation, testing & Commissioning of 200W LED Profile light 19 degree with below specifications :- Lamp Power : LED, 200W Power Supply : AC 110-230V, 50Hz Focus : Manual Focus , Beam Angle : 19° , Dimmer : 0-100% linearly adjustable manually focusable, high quality optical system, glass reflector. DMX Control protocol: DMX 512., CRI:>90,Dimming: 100 - 0% dimming • Control system: DMX,Auto run and master/slave, Working temp : 30-40 degree celcius,No noise fan of pccooler, Protection Rating : IP20 , CE Certified complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	4	Nos	Rates to be quoted by contractor
75	Supply, installation, testing & Commissioning of 310W 7R Beam moving head complete with MSR 7R Lamp, Prism, Gobos, Colour effect functions Pan : 540° (16 bit) Tilt : 270°(16 bit) Advanced moving system: fast, stable and quiet, auto X-Y repositioning, Shutter: 0 – 100% Dimming and variable strobe, Option of Male female DmX in/out through 3 & 5 Pins, 14 di chroic filters +open, Duo rainbow effect, 18 rotating, indexable, gobos+open, Rotating prism: Dual 8 Facet, DmX 5pin Connectors, Power Loop-in Loop-out Optional, Focus: motorized focus, 7 Pre built programming, Electronic Flicker free operation, Dimension 415 x 343 x 495mm, LED Display Indication complete in all respect with required accessories as desired by Engineer- In- Charge (Make: Leksa, Canara, Effectron)	1	Nos	Rates to be quoted by contractor
76	Supply, installation, testing & Commissioning of 2000W Fog machine wire / remote / DMX 512, electronic control temperature. Smoke output 20000cuft/min @ 12Mtrs complete in all respect with required accessories complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron)	1	Nos	Rates to be quoted by contractor
77	Supply, installation, testing & Commissioning of Diecast aluminium "C" clamp with safety pin. SWL 100 Kgs complete in all respect with required accesories as desired by Engineer- In- Charge.	15	Nos	Rates to be quoted by contractor
78	Supply, installation, testing & Commissioning of Rack mount photo isolator DMX splitter unit 1 DMX input and 6 isolated output with following specifications: complete in all respect with required accessories as desired by Engineer- In- Charge. Power Supply: 90-240V AC, 45-63Hz. Control: DMX 512 protocol. Control Signal input: 5 pin XLR female. Size: 482 x 44 x128mm.Weight:2Kg. (Make: Leksa, Canara, Effectron)	3	Nos	Rates to be quoted by contractor
79	Supply, installation, testing & Commissioning of Lighting console shall support the processing of up to 1024 total DMX512 outputs by use of potentiometers for submasters, playbacks and effects as well as buttons to activate cues. The console shall support up to 250 control channels for the purpose of controlling dimmers for incandescent loads. The console shall support up to 30 automated luminaires with a maximum of 40 attributes each. Each intensity channel shall be controlled on a Highest Takes Precedence complete in all respect with required accessories as desired by Engineer- In- Charge. (Make: Leksa, Canara, Effectron,Avolite)	1	Nos	Rates to be quoted by contractor
80	Supply, installation, testing & Commissioning of hot dipped GI perforated cable trays of size 40x75x40 x2 mm complete in all respect with required accesories as desired by Engineer- In- Charge.	20	Mtrs	Rates to be quoted by contractor
81	OUTDOOR UNITS: Supply, Installation, Testing and Commissioning of Variable refrigerant volume/ Variable refrigerant flow modular type air-conditioning system suitable for cooling and heating by using variable capacity Inverter based compressors in each Module complete with outdoor units with controller and with accessories & sub assemblies fittings etc. full charging of R-410A refrigerant gas complete, powder coating complete as per specifications,with compatibility to BMS for A/M status, RUN status & Remote start/stop command.(Bacnet/IP) complete in all respect with required accesories as desired by Engineer- In- Charge. Make: Mistubishi,o'general,Daikin,Hitachi Outdoor units of nominal capacity as per manufacturer's standard suitable for operating with R-410A refrigerant. Minimum 16 HP complete in all respect with required accesories as desired by Engineer- In- Charge.	4	Nos.	Rates to be quoted by contractor

82	INDOOR UNITS (NOMINAL CAPACITY) Supply, Installation, Testing and Commissioning of Ceiling Suspended with high static type Ductable units of following Nominal capacities with fittings, flexible canvas connection etc. complete with Corded remote controls with (Bacnet/IP) ,as required. 16HP / Convertible IDU complete in all respect with required accessories and remote controllers for indoor units as desired by Engineer- In- Charge.	4	Nos.	Rates to be quoted by contractor
83	Supply, Installation, Testing and Commissioning of Y - Joints and connecting Kits with necessary fittings as per specification complete in all respect with required accesories as desired by Engineer- In- Charge.	2	Nos.	Rates to be quoted by contractor
84	Installation of Variable Refrigerant Flow SystemInstallation Modular type outdoor units equipped with highly efficient scroll compressors. Each outdoor unit should have minimum 1 no. variable compressor up to 18 HP, 2 nos. variable compressors upto 32 HP capacity, 3nos. variable compressors up to 54 HP capacity with special heat exchanger, 27 Steps speed control DC motor condenser fan , auto check function for connection error, auto address setting and in built Double Stage Oil Speration to ensure minimum oil entrachment and proper lubrication.The condensing units should be capable for outside ambient 48 Deg. C.Installation, testing and commissioning Outdoor Unit 16 HP Heat Pump Type as per IS standards complete in all respect with required accesories as desired by Engineer- In- Charge. Make: Mistubishi,o'general,Daikin,Hitachi	4	Nos.	Rates to be quoted by contractor
85	Indoor Units Supply, installation, testing & Commissioning of Indoor units address setting and capacity as mentioned below. multispeed motor, coil section with DX coil, outer cabinet, drain pan mechanism insulation, pipe connections, fresh air intake connector and individually controlled louver setting for cassettes and cancelled unit above 3 hp have higher air quantity of 400 cfm/tr etc. of various capacities as per IS standards and specifications. with required topping of R410 Gas, Convertible 16HP Ductable,Corded /Cordless Remote, M S Stand for Outdoor Unit mounting,Multy Kits complete in all respect with required accesories as desired by Engineer- In- Charge.	4	Nos.	Rates to be quoted by contractor
86	Refrigerant Piping, Drain Piping & Cabling Supply installation testing and commissioning of Interconnecting refrigerant pipe work with (19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units as per IS standards & specifications, all piping inside the room shall be properly supported with MS hanger complete in all respect with required accesories as desired by Engineer- In- Charge. 28.6 mm O.D.(with 19 mm insulation)	70	Rmt	Rates to be quoted by contractor
87	Refrigerant Piping, Drain Piping & Cabling Supply installation testing and commissioning of Interconnecting refrigerant pipe work with (19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units as per IS standards & specifications, all piping inside the room shall be properly supported with MS hanger complete in all respect with required accesories as desired by Engineer- In- Charge. 22.2 mm O.D..(with 19 mm insulation)	20	Rmt	Rates to be quoted by contractor
88	Refrigerant Piping, Drain Piping & Cabling Supply installation testing and commissioning of Interconnecting refrigerant pipe work with (19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units as per IS standards & specifications, all piping inside the room shall be properly supported with MS hanger complete in all respect with required accesories as desired by Engineer- In- Charge. 15.9 mm O.D.(with 13mm insulation)	70	Rmt	Rates to be quoted by contractor
89	Refrigerant Piping, Drain Piping & Cabling Supply installation testing and commissioning of Interconnecting refrigerant pipe work with (19mm/13 mm thick) closed cell elastomeric nitrile rubber tubular insulation between each set of indoor & outdoor units as per IS standards & specifications, all piping inside the room shall be properly supported with MS hanger complete in all respect with required accesories as desired by Engineer- In- Charge. 12.7 mm O.D.(with 13mm insulation)	20	Rmt	Rates to be quoted by contractor
90	Supply, Installation, testing & commissioning of Refnet Joints complete in all respect with required accesories as desired by Engineer- In- Charge.	2	Set	Rates to be quoted by contractor
91	Providing and fixing rigid PVC piping complete with fittings, supports as per IS standard & specifications and duly insulated with 6 mm thick closed cell nitrile rubber insulation complete in all respect with required accesories as desired by Engineer- In- Charge. 25 mm dia	72	RMT	Rates to be quoted by contractor

92	Providing,fixing, balancing, commissioning and testing of Site fabricated sheet metal ducting complete with supports, dampers, vanes etc. as per specifications and drawings including cutting in wall for crossing and making good the same if required complete in all respect with required accesories as desired by Engineer- In-Charge. G.I. Sheet Metal Ducting (Rectangular) 24 Gauge (thickness 0.63mm sheet)	250	Sqmt	Rates to be quoted by contractor
93	Providing,fixing, balancing, commissioning and testing of Site fabricated sheet metal ducting complete with supports, dampers, vanes etc. as per specifications and drawings including cutting in wall for crossing and making good the same if required complete in all respect with required accesories as desired by Engineer- In-Charge. G.I. Sheet Metal Ducting (Rectangular) 22 Gauge (thickness 0.80mm sheet)	120	Sqmt	Rates to be quoted by contractor
94	Duct Insulation Providing and Fixing cross linked elastomeric nitrile insulation with class 'O' , FM approved, with anti microbial treatment on ducts complete as per specifications and drawings. 9 MM thick	300	Sqmt	Rates to be quoted by contractor
95	Duct Acoustic Lining Providing and Fixing duct acoustic lining with Fiber Glass insulation with tissue paper & alluminum jalli insulation covered with perforated aluminium sheet, nuts, bolts etc. complete as per specifications and drawings. 25 MM thick	70	Sqmt	Rates to be quoted by contractor
96	Grilles/Diffusers/Louvres Providing and Fixing Extruded aluminium supply and return air grilles/diffusers/louvres, extruded aluminium dampers, supply air plenum etc. duly powder coated as per specifications and drawings.	30	Sqmt	Rates to be quoted by contractor
97	Underdeck Insulation Underdeck insulation with expanded polystrene complete in all respect with required accesories as desired by Engineer- In- Charge. 50 mm thick	600	Sqmt	Rates to be quoted by contractor
98	Microprocessor Based 1-loop, True Peer-to-Peer Networkable Addressable Fire Alarm Control Panel with minimum 600 characters LCD display, 4000 event plus 1000 alarm log history events, QWERTY keypad for programming. The panel should be equipped with sufficient numbers of loops considering 20% spare capacity in each loop. Each loop shall have a capacity of minimum 300 analog addressable devices. The panel shall work in degrade mode in case of CPU failure, Products not having this feature may offer Redundant CPU. Four access levels, flash EPROM, 240 volts AC power supply, automatic battery charger, 24 volts sealed lead acid batteries sufficient for 24 hours normal working and 30 mins in alarm condition. The panel shall be complete 2 ways Communication Fire Fighters System capable of supervising all the speaker circuits with adequate zone control and accessories. Failure of Fire Panel CPU shall not result in failure of DVC operation. The Fire Fighters Telephone System shall be capable of having minimum 30 Telephones in conference in multiple FFT Risers. Designed to meet UL864, 10th Edition and FM complete in all respect with required accesories as desired by Engineer- In- Charge. Makes: Notifier/ IFC/ Neptune Fire(USA)/ SCHRACK/ FENWEL	1	Nos	Rates to be quoted by contractor
99	Addressable Multi-criteria Photo-Thermal Detector with sensitivity range of 0.5 to 4.0% obs/ft.The intelligent multi criteria detection device shall include the ability to combine the signal of the thermal sensor with the signal of the photoelectric signal in an effort to react hastily in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a false alarm condition by examining the characteristics of the thermal and smoke sensing chambers and comparing them to a database of actual fire and deceptive phenomena. The detector shall have twin bi-colour LED for 360 deg viewing. Addressing shall be with user friendly rotary decimal switches. Designed to meet UL268, 7th Edition. FM Approved. Makes: Notifier/ IFC/ Neptune Fire(USA)/ SCHRACK/ FENWEL	16	Nos.	Rates to be quoted by contractor
100	Addressable Beam Detector. The beam detector shall be used for High Ceiling application with a detection range upto 100 mtrs having 4 manual & 2 auto sensitivity settings. The beam detector shall be True addressable installed on the SLC circuite & communicate directly with the panel without any interface module. Makes: Notifier/ IFC/ Neptune Fire(USA)/ SCHRACK/ FENWEL	1	Nos.	Rates to be quoted by contractor
101	Addressable Manual Call Point (Pull down / Break Glass Type). The device shall have an LED which shall blink in normal state & get steady on activation to monitor the heath status of the device. Makes: Notifier/ IFC/ Neptune Fire(USA)/ SCHRACK/ FENWEL	4	Nos.	Rates to be quoted by contractor


102	Addressable Control Module for Sounders / Strobes / Sounder cum Strobes. The control module shall provide supervised NAC output rated at 24v DC, 2A. The device shall have an LED which shall blink in normal state & get steady on activation to monitor the health status of the device. Addressing shall be with user friendly rotary decimal switches. Module shall be supplied with mounting plate from OEM for ease of installation & maintenance. Makes: Notifier/ IFC/ Neptune Fire(USA)/ SCHRACK/ FENWEL	4	Nos.	Rates to be quoted by contractor
103	Addressable Relay Module for AHU, Access Control, Lifts, Staircase Pressurization, Fire Suppression & other Third Party Outputs. The relay module shall provide contact rated at 24v DC, 2A. The device shall have an LED which shall blink in normal state & get steady on activation to monitor the health status of the device. Addressing shall be with user friendly rotary decimal switches. Module shall be supplied with mounting plate from OEM for ease of installation & maintenance. Makes: Notifier/ IFC/ Neptune Fire(USA)/ SCHRACK/ FENWEL	2	Nos.	Rates to be quoted by contractor
104	Addressable Monitor Module for Sprinklers, Panic Bars & other Third Party Inputs. The monitor module shall monitor potential free contacts. The device shall have an LED which shall blink in normal state & get steady on activation to monitor the health status of the device. Addressing shall be with user friendly rotary decimal switches. Module shall be supplied with mounting plate from OEM for ease of installation & maintenance. Makes: Notifier/ IFC/ Neptune Fire(USA)/ SCHRACK/ FENWEL	2	Nos.	Rates to be quoted by contractor
105	Sounder cum Strobe rated at 80 dBA @ 3m for Audible annunciation and 115cd flashintg at 1 Hz for visual indication. UL Listed complete in all respect with required accesories as desired by Engineer- In- Charge.	4	Nos.	Rates to be quoted by contractor
106	Directional Sounders with 20 hz to 20 khz operating frequency with minimum 8 distinct sound patterns to indicate corridors, Exit doors, Move upward, move downward etc. to direct Occupants for fast & safe Evacuation complete in all respect with required accesories as desired by Engineer- In- Charge.	2	Nos.	Rates to be quoted by contractor
107	Addressable Fire Fighter's Telephone Jack with suitable supervised module for two way communication between Remote Fire Fighter & Fire Command Center. UL Listed complete in all respect with required accesories as desired by Engineer- In- Charge.	4	Nos.	Rates to be quoted by contractor
108	Fire Fighter's Telephone Handset for two way communication between Remote Fire Fighter & Fire Command Center complete in all respect with required accesories as desired by Engineer- In- Charge.	2	Nos.	Rates to be quoted by contractor
109	Supply and laying of 2 C X 1.5 Sq mm multi stranded twisted unshielded FRLS Copper cable complete in all respect with required accesories as desired by Engineer- In- Charge.	10	Rmt.	Rates to be quoted by contractor
110	Providing and fixing auditorium chairs as per specifications as below: The seat shall be made of Polyurethane Foam moulded with 1.5 ±0.1cm. thk. plywood insert and shall be upholstered with fabric. Approx. Seat Size shall be: Depth: 42.0cm. Width @ rear: 44.0cm. Width @ front: 41.0cm. The back assembly shall be flexing type and made of Polyurethane Foam moulded with MS. tubular frame insert and shall be upholstered with fabric and back cover. The insert shall be made of 01.9 ±0.02cm x 0.16 ±0.0.128cm. thk. MS tubular frame with flexible nylon straps running across the length and width of the frame. Approx. Back Size shall be: Height: 75.0cm, Width @ top: 34.5cm, Width @ seat level: 46.0cm. The HR polyurethane foam is moulded with density = 45 +/-2 kg/m3. The back cover and mechanism cover shall be vacuum formed from black ABS sheets. The Armrest understructure shall be upholstered PU foam moulded with MS insert. Arm tops shall be made of black Integral Skin polyurethane with 50-70 Shore 'A' Hardness & reinforced with wooden insert. Armrest width= 7.0 ±0.5cm and shall be offered as common/individual armrest between chairs. MS black powder coated (DFT 40-60 microns) understructure with integrated, auto tip-up mechanism which folds the seat when not in use. Footprint area of base plate: made of HR steel 15.0 ± 0.2cm X 22.0 ± 0.2cm X 0.5 ± 0.05cm thick. Backrest supporting beam width: 46.0 ±0.2cm.(L) x 8.0 ±0.03cm. x 4.0 ±0.03cm. x 0.2±0.0.16cm MS tube. Understructure shall be fixed to ground by anchors with washer and nut. The auditorium chair shall be designed to get mounted/grouted on floors with flooring specification as mentioned in flooring pre-requisite Godrej doc-no: STG 129368. Overall Dimensions of Chair shall be Seat Height - 46.5 cm, Height - 101.0 cm, Width & Depth of Chair Width(w1)- 60.0cm(individual), width(W) - 53.0 cm.(common arm) and Depth-64.0cm.(normal) , Depth(D2)- 49.0(seat folded). The back seat shall be fixed and chair bottom shall be moveable complete in all respect with required accesories as desired by Engineer- In- Charge. (Make-Penwalker, Godrej, Haworth, Durian, Wipro)	421	Nos	Rates to be quoted by contractor

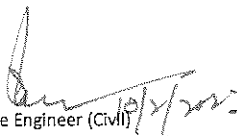
111	Providing and fixing of position wall acoustic perforated paneling made from HDF/HDHMR Strips of various width and 15 mm panel thick over already existing GI/Al frame & 50mm thick 1000 GSM Non-woven thermal bonded polyester wadding with chicken mesh jali of 24 gauge on wall complete system has to be achieve NRC .8 level including cost of required cut-outs, with required scaffolding complete in all respect with required accessories as desired by Engineer- In-Charge. (Panel Make:Acoustika,Armstrong,Anutone,Anakon, Board make:Action Tesa,Centuryply,Greenply)	119.72	sqm	Rates to be quoted by contractor
112	Providing and fixing in position IFR Grade fabric in required color fixed with synthetic grippers over already existing GI/Al frame & 50mm thick 1000GSM Non woven thermal bonded polyester wadding with chicken mesh jali of 24 gauge & 20mm thick perforated wood wool board including cost of required cut-outs. complete system has to be achieve NRC 1 level. complete in all respect with required accessories as desired by Engineer-In- Charge. MAKE:Anutone,Acoustika,Armstrong,Anakon.	370	sqm	Rates to be quoted by contractor
113	Providing and laying of 50mm thick 1000GSM Non woven thermal bonded polyester wadding to be laid in cavity behind wall panelling to be fixed with chicken mesh jali of 24 gauge at all heights complete in all respect to the entire satisfaction of the engineer-in- charge. (Note: The Contractor to submit Manufacturing Test Certificate), required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. Make:Dupont,Armstrong,Acoustika,Anutone,Anakon.	640	sqm	Rates to be quoted by contractor
114	Providing and fixing in position Aluminum pipe framing of 50 x 50 mm, weighing 0.88 kg/mt of required square aluminum pipe dimension at 600 x 600 mm center to center both ways, with required aluminum pipe cleats and aluminum studs / brackets of aluminum pipe of required length provided at 600 mm center to center to keep framing away from wall and ceiling at required angle with required scaffolding as per detail. Architectural / Acoustic design and drawings complete in all respect with required accessories as desired by Engineer- In- Charge. (Make:Tata, Jindal,Hindalco)	712	sqm	Rates to be quoted by contractor
115	Providing and fixing seamless false ceiling of 12 mm thick Gypsum Board ceiling curved in plan/section as per detailed drawings. Rates shall be inclusive of making cut-out of lighting fixtures, A.C.diffuses and providing additional channel for support of the same with required scaffolding. No extra for providing additional support/channel shall be paid and no deduction of cut-out shall be made etc.complete in all respect with required accessories as desired by Engineer- In-Charge. (make:TATA,Armstrong,Saint gobain,Boral)	350	sqm	Rates to be quoted by contractor
116	SOFT/GLASS FIBER ACOUSTICAL CEILING:- Providing and Fixing of Soft Fibre Acoustical Suspended Ceiling System at all heights as per drawings with Board edge tiles 600 x 600 x 15mm with 24mm exposed grid. The tiles should have Humidity Resistance (RH) of 95%, NRC 0.9, Light Reflectance 85%, Colour White/Black, Fire Performance UK Class 0 / Class 1 (BS 476 pt - 6 and 7) suitable for Green Building application with recycled content of 66% GW and 74% RW%. Tile laid on 24 mm wide T - section flanges of colour black/white having rotary stitching on all T sections i.e. Main Runner, 1200 mm and 600 mm Cross T with a web hgt of 32mm and a load carrying capacity of 15.34Kgs/M2, with required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. (Make::TATA,Armstrong,Saint gobain,Boral,Anutone or equivalent)	87	sqm	Rates to be quoted by contractor
117	Providing and fixing in position Teak Wooden flooring planks of size 25 mm thick (Finished) of size 100 x 25 mm of minimum 1.00 mt length fixed on 18 mm thick water proof plywood in "Tongue and Groove" fashion as directed. 18 mm thick water proof plywood shall be supported on 50 x 50 mm thick sal wood battens fixed at 600mm c/c both ways with 2 coat of anti-termite chemical. Sal wood frame will be rested on 75 x 75 x 5 mm thick neoprene pads at every joint. Teakwood floor shall be polished with minimum two coat of matt finish Melamine spray polish over a sealer coat with necessary staining and sanding etc. complete in all respect with required accessories as desired by Engineer- In-Charge. Teak wood flooring has to be approved by EIC before supply. (Ply Make:Greenply ,Duraply,Centuryply)	375	sqm	Rates to be quoted by contractor
118	Providing and Fixing of Flocked textile floor covering of Nylon 6.6 face fiber or equivalent of approved make with 100% Nylon and completely water proof resilient backing. The flooring should be Anti static with thickness of 4.3 mm and approximate weight of 1.8 k.g./sqm of roll form. The carpet should be completely stain resistant and of a density approx. 80 million fibers/sq.mtr (70 million fiber/sq.yd) in the width of 2 mtr .The floor covering should have Fire Test EN-13501, Appearance Retention Hexapod ISO 140-8, Friction Slip Resistance Test EN 14041 Class DS, SANITISED anti-microbial treatment, with resilient waterproof backing, anti allergic which is certified by British allergy foundation, with ten year replacement guarantee etc.complete in all respect to the entire satisfaction of engineer-in-charge. (make:Outvie,Carpeteria,Flotex or equivalent)	100	sqm	Rates to be quoted by contractor

119	Providing & Applying 3-6mm layer of epoxy based self levelling compound to give perfect level for flooring complete in all respect with required accessories as desired by Engineer- In- Charge.	25	sqm	Rates to be quoted by contractor
120	Fire Rated/Acoustical Wooden Doors: Supply and fixing of 70mm thick STC38 db acoustic door having infill of 47mm thick resin bonded glasswool of 24kg/ M3 density coated with FR Acrylic Sealant Sandwiched between two 9 mm thick starpan calcium silicate boards without asbestos, Brucite and Meerschaum having a density not more than 1150kg/ M3 and thermal conductivity 0.14 W/MxK faced with 6mm thick commercial ply with heat activated intumescent fire seal strip of size 10mm x 4mm mounted in the grooves having hardwood lipping of size 15mm x 70mm and 1mm thick laminate facing on both sides in desired shade and colour. The rate should also include Red Merrandi Frame 145 x 70mm with Commercial Ply Facing (6mm +1mm laminate on both sides)complete in all respect with required accessories as desired by Engineer- In- Charge. (Ply make :greenply,duraply, centuryply)	5	Sqm	Rates to be quoted by contractor
121	Providing and fixing of Double Leaf Panic Bar set along with Panic Trim for operation from the other side of the Panic Bar Complete in all respect to entire satisfaction of the engineer-in-charge.(make:hettich,becker,marshal)	2	nos	Rates to be quoted by contractor
122	Providing and fixing SS Ball Bearing Hinges of size 100 x 75 x 3mm fixed with SS Screws Complete in all respect to the entire satisfaction of the engineer-in-charge.(hettich,becker,marshal or equivalent)	4	nos	Rates to be quoted by contractor
123	Providing and fixing of Heavy duty door closer complete in all respect to the entire satisfaction of the engineer-in-charge. (hettich,becker,marshal or equivalent)	4	nos	Rates to be quoted by contractor
124	Providing and fixing 25mm dia & 400mm long brushed steel finish pull handles with long bolt and cap for fixing from outside complete in all respect with required accessories as desired by Engineer- In- Charge.(hettich,becker,marshal or equivalent)	24	nos	Rates to be quoted by contractor
125	Providing and fixing blinds of desired colour and shade & spring drive system with steel ball chain/one touch with speed control action roller blind with end brackets with head rail, components, bottom bar. Fabric : screen classic 5% ,Fabric value : 465 gsm , Thickness : 0.65 mm Fabric to be as per approved sample complete in all respect with required accessories as desired by Engineer- In- Charge.	10	sqm	Rates to be quoted by contractor
126	Providing and fixing of Main Curtain made out of velvet curtain (450 to 500 gram in 1 mtr) cloth flammability BS EN 1021-1:1994 with upwards rolling arrangement and motorized operation complete with runners, runners, master runner,pullies,steel wire rope required thickness and strength,1 HP motor(make cromton, kirloskar or equivalent as approved by EIC) of required number,air breaker contactors(make L&T,SIEMENS,Schneider)of required number,push button to roll and unroll or stop positions.The curtain should be draped to upwards when in closed position complete in all respect with required accessories as desired by Engineer- In- Charge. (Fabric Make:Raymonds,outive,Response, Nexgen)	1	Nos	Rates to be quoted by contractor
127	Providing and fixing of rear Curtain (350 to 400 gram in 1 mtr) made out of velvet curtain cloth flammability BS EN 1021-1:1994 with sliding arrangement and motorised operation complete with runners, runners, master runner,pullies,steel wire rope required thickness and strength,1 HP motor(make cromton,kirloskar) of required number,air breaker contactors(make L&T,SIEMENS,Schneider)of required number,push button to roll and unroll or stop positions with required scaffolding.The curtain should be draped to when in closed position complete in all respect with required accessories as desired by Engineer- In- Charge. (Fabric Make: Raymond, JC Joel, Response, Nexgen)	2	nos	Rates to be quoted by contractor
128	Providing and fixing of velvet cloth (outvie) black fabric flammability BS EN 1021-1:1994 (cigarette) as per approved sample fixed over the metal framework metal framework made out of 2"x 2" square MS pipe specification complete for wings Measurement will be made for external dimensions including heading for payment Size 18' x 4'complete in all respect with required accessories as desired by Engineer- In- Charge. Make Response/Raymonds/Nexzen/outive	1	nos	Rates to be quoted by contractor

129	Providing and fixing of frills in double gathering box pleats stitched out of valvet fabric of flammability BS EN 1021-1:1994 (cigarette) The frill to be fixed from the suspension grid with 38 mm dia B class ms pipe suitably hung by mean of 35x4mm MS flat. The pipe & flat to be painted with black enamel paint size 53' x 3' complete in all respect with required accessories as desired by Engineer- In- Charge. .Make Response/Raymonds/Nexzen/outive	5	nos	Rates to be quoted by contractor
130	Providing and fixing in position Acoustical Panelling made from Wood wool board 20 mm thick over existing GI/AL frame & 50mm thick 1000GSM Non woven thermal bonded polyester wadding with chicken mesh jali of 24 guage as per detailed Architectural - Acoustical design & drawings etc. with required scaffolding complete in all respect with required accessories as desired by Engineer- In- Charge. (Make:Anutone,Fibertex, Duratax,Anakon)	58	sqm	Rates to be quoted by contractor
131	S/E of rechargeable Emergency Exit light for auditorium as per Fire safety specifications complete in all respect with required accessories as desired by Engineer- In- Charge.	4	nos	Rates to be quoted by contractor
132	S/E of 2/3 watt footlight for stairs complete in all respect with required accessories as desired by Engineer- In- Charge. Make Crompton/Wipro/Polycab/Jaquar or equivalent make as approved by EIC	20	nos	Rates to be quoted by contractor
				CSR+NS Total
				76,470,638.00
Rates/Quantities taken in the DNIT are provisional and for estimation purpose only. The payment to the contractor/agency should only be made as per tendered rates/actual work done at site/approved design by University Authorities and PWD specifications.				

Not item checked
 Draftman(Architect)



 Executive Engineer (Electrical)


 Executive Engineer (Civil)